be voluntary. It will be then more glorious and more meritorious. Why this artificial show? Further we are not in medieval times. We are in the 20th century. Considering the shortage of Members on this side of the House, I do not propose to test this resolution by a division. Therefore, I may be allowed to withdraw the resolution.

The resolution was, by leave, withdrawn.

Mr. Chairman.—(*Mr. K. Ayyappan*).—Mr. V. K. Krishnankutty, we have left out your resolution. You can move it now.

Mr. V. K. Krishnankutty (*Anthikad*).—I do not move.

17. Supply of water-power available in the State.

Mr. T. S. Balarama Ayyar (*Trichur North.*)—Mr. President Sir,

The resolution that stands in my name reads thus: *This Council recommends to the Government that very early steps be taken to harness the water power available at Poringalkuthu or any other suitable place in the State, for production of electricity and supply of cheap power throughout the length and breadth of the State, for industrial, agricultural and domestic uses.*

Agriculture is our mainstay; that has become a trite saying; but nonetheless it is as true today as it was hundred years ago. It is therefore incumbent on our part to see that the agriculturist is not wiped out of existence. No doubt the Debt Conciliation Act has been passed, Debt Conciliation Boards are sitting, and the Land Mortgage Bank has been started, but I think the position of the agriculturists is going from bad to worse. Unless something very effective and substantial is done to alleviate the misery of the agriculturists I am afraid the days of the agriculturists are numbered. The real solution seems to me, to lie in developing the cottage industry. In this connection, I may be permitted to read a very small extract from my speech during the budget session. I said then that agriculture in its present mode had ceased to be remunerative. It is idle to expect the agriculturist to be able to make any surplus income from his lands to liquidate his debts. It will be too long before he finds it feasible to take to the so-called scientific method of agriculture and do more than, to use the words of Goldsmith, 'merely forcing the churlish soil for a scant bread'. Part-time

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occupation in cottage industries seems to be a very good solution to relieve rural indebtedness. In this as well as in many other respects, we can learn much from Japan. The Japanese Government have, by cheap power, motor transport and automatic machines, brought small scale industries to the door of the agriculturists who form nearly half her population and who, from land alone, are deriving only a meagre sustenance. It is not generally known that one half of the workers in industries in Japan are employed in workshops employing fewer than 5 persons. 45 per cent of her cotton textile exports and a very large portion of her exports in rayon, woolen goods, electric filament lamps, rubber goods, even cement and cycles, are from her small scale industries, and manufactures in other countries are really affected in competition more by these small scale industries than by the big industrial concerns. Here is a striking proof of what a determined Government can do to enable the agriculturists to eke out a subsidiary income from home industries.

Sir, it may look strange, but it is none-the-less a fact that the beautiful watches that come from Switzerland are the products of cottage industry. To develop the cottage industries, first and foremost we should make available cheap power. It was at one time thought that no country could be great unless she is industrially great and no country can be industrially great unless she has got coal. The former proposition still holds good. But the latter one that no country can be industrially great unless she produces coal is not equally true. If water-power is available, that will more than compensate the absence of coal. India, though comparatively very much poor as far as coal is concerned, is rich in her water-power. But it is indeed very sad to note that her water-power is not being properly harnessed for the production of cheap power. It is a shame to think that only 2 per cent of the available water power of India is harnessed for the production of electricity. Look at Japan. There the percentage, I am told, is 80 per cent. 80 per cent of the water-power available in Japan has been harnessed to produce electricity. That is more or less the case with almost all the European countries also. How then with only 2 per cent of water-power being harnessed for the production of electricity, can we expect, Sir, to compete with Japan or with the other European countries? It was at the time of Sir Joseph Bhore that an investigation into the possibility of harnessing the water-power at Poringalkuthu was made. Unfortunately the scheme of Mr. Bhore (he was then only Mr. Bhore) did not receive practically any consideration at the hands

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of his successors. I remember, in his scheme, the load he estimated to get from Trichur, was a thousand horse-power. You may be surprised to know that the industrial load of Trichur today is five times that figure, even though cheap electric power is not available. I also remember that according to the estimate of Sir Joseph Bhore he only wanted about 20,000 horse-power to make his scheme commercially a success. If Trichur alone can give you 5,000 horse-power even when cheap power is not available, there should be absolutely no difficulty for the whole of Cochin to give you 20,000 horse-power and even as a matter of fact 40,000 horse power. Then regarding the cost, the Engineering Member must certainly be in a better position to give you some idea as to the cost of harnessing water-power at Poringalkuthu for production of energy. According to my estimate it may cost anywhere between 300 to 3000 rupees per kilowat. I think we can safely say that it may be somewhere 400 rupees per kilowat and if the idea is to instal a station of 20,000 kilowats it will come to, say, a crore of rupees. This, I should think, is not certainly a very high figure considering the advantages which the State would derive out of it.

The output of work in India per head is 90 units. Out of this 90 units, 60 comprise of human labour, 20 animal labour and only 10, steam and electric. While I said the output of work as far as India is concerned is about 90 units per head, can you guess what the output of work per head in European countries or in Japan is? You may not believe, if I tell you that it is 1,800 units against 90 for India. It is about 1,800 units in Japan and in the other European countries. We can never hope to come to the level of Japan or of the European countries unless the major portion of the available water power is harnessed for the production of cheap electricity.

Then again an investigation was at one time made to manufacture paper out of soft wood available in our forests. The question was ultimately dropped because our forests do not produce sufficient quantity of wood fuel to convert the soft wood into pulp. But if electric energy is available all soft wood that is now being wasted in our forests can be converted into pulp for paper.

I do not think it is necessary for me to detail the benefits that our State can hope to get if the water-power available is harnessed for the production of electricity. I may state this as my candid opinion, that if you really want to solve the problem of poverty and unemployment, your duty lies in properly

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organising our power resources and in making power available at a rate not costlier than what the advanced countries in Europe and Japan are getting it. With these words I commend my resolution to the acceptance of the House.

Mr. A. V. Moothedan (*Chalakkudi*).—I second it.

Mr. V. K. Aravindaksha Menon (*Chief Engineer*).—Mr. President, Sir, this House is aware that the Government have been fully alive to the necessity of introducing cheap electric power in the State. During the last three years the Government have been to a great extent instrumental in introducing large scale electric works in the towns of Ernakulam and Trichur. As a result now we have in these towns electricity at a very cheap rate. The rates that have been sanctioned by Government for high tension supplies, to mills, is as low as about half anna per unit. That is a rate parallel of which you cannot have even in European countries. In America one of the greatest of the recent developments of the electricity is the famous Tennessy Valley Project. In that project electricity is being used almost exclusively for the use of farms and allied agricultural occupations. There they are boasting about their 2 cent electricity. 2 cents are equivalent to one anna. They are using the power for drainage and other works. But in Trichur and Ernakulam they are now selling electricity at the rate of half an anna per unit, a rate which is very hard to bear in any other country. But I perfectly agree with the Member in thinking that development of hydro electric scheme is very necessary in the State. But there is one thing about it. It is an industrial concern and it has got to be viewed from a profit and loss basis. There is the old proverb that half-truths are simple but the whole truth is complicated. The half-truth in this case is this. There is water flowing and going to the sea and this power is wasted. Cochin is a poor country and we have to harness our natural resources for power. Therefore hydro electric scheme ought to be taken into consideration. If the argument stops there, the hydro electric development ought to take place at once. But other points have also to be considered. One must see wether there is sufficient demand for using that power and whether the capital expenditure involved in the project would along with its maintenance charges and fixed charges be justified by the demands which are in prospect.

The scheme which was once investigated some 20 years ago at the time of Mr. Bhore contemplated the construction of Hydro electric work of a capacity of about 8000 kilowats by

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harnessing water-power at Poringalkuthu. He has said in his report that this hydro electric scheme stands or falls together with three or four other schemes. One is the Tata Oil Mills for which he expected a load of 2000 kilowats for 20 hours a day for 300 days a year. Then there is the kole irrigation area from which he hoped to get Rs. 6 per acre for 20000 acres and for drainage purposes. Then the paper manufacture and then a prospect of electrifying the railway from Shoranur to Ernakulam and he expressly stated that all these schemes stand up together and if one of the schemes fail the whole scheme will fail. So you see how top-heavy, how un-certain were the prospects of the success of that scheme. It was again investigated about six years ago and the scheme was scrutinised by a famous firm of consulting Engineers. They in their report said that the scheme of developing about 8000 kilowats would cost about Rs. 66,00,000 or Rs. 800 per kilowat and that the rates of charges which they fixed were much higher than the rates at which we are selling the power at Ernakulam and Trichur.

Dr. A. R. Menon *(Pallippuram).*—What was the rate they proposed?

Mr. V. K. Aravindaksha Menon *(Chief Engineer).*—They proposed about 1½ to 2 annas high tension supply. There is a certain economic limit for demand. If the demand is below that limit then the cheaper scheme by thermal stations costing about Rs. 200 per kilowat would be advantages. If the demand grows much higher, then, the hydro electric scheme may be justified. After all if you are considering about the rates the rate of half an anna per unit cannot be said to be too high. The cost of actual fuel required to produce a unit of electricity may be about 2½ pies. That is the main saving that you make in having a hydro electric station. But in countries like Europe they cannot depend upon fuel. Switzerland which has no fuel at all has to import all its coal or oil. So they had the necessity to improve the hydro electric scheme. Similarly Japan. Now, situated as we are where we do not find any difficulty in getting fuel at a rate which is economical and which will compare favourably with hydro electric power, I think we should postpone the consideration of the development of hydro electric scheme until such time our demand justifies such a scheme. At present we have got in Trichur as the Hon'ble Member stated about 3,000 kilowats load. That is insufficient to take up a scheme costing 66 lakhs of rupees. The overhead charges of 66 lakhs of rupees at 10 per cent would come to

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nearly 6½ lakhs of rupees and then the personnel, staff and repairs and replacement may cost easily another 60,000 rupees. That means we must get as revenue from people about 7.2 or 7.3 lakhs of rupees just to break-even. Unless such a time when the industry is developed it may probably be unwise to start a scheme of this nature. Now we have started a thermal station giving power at such low rates. We can expect good development in the consumption of power and when that consumption comes to our figure which would justify a hydro electric scheme the Government I am sure will not delay taking up the scheme.

Mr. T. S. Balarama Ayyar *(Trichur North)*.—Mr. President, Sir, I am sorry I do not consider the reply of Government as very satisfactory. It would appear that Government is viewing this scheme with what I may all a half heartedness. My principal point has not been answered and that is I want to develop the cottage industries if really we want to solve the problem of poverty and unemployment. And cottage industries do not lie in towns like Trichur and Ernakulam. Out of a population of about 12½ lakhs in the State, Trichur town has a population of only 35,000. The remainder of the huge population is scattered in villages.

Mr. V. K. Aravindaksha Menon *(Chief Engineer)*.—The power station at Trichur is capable of giving power to the whole of the Trichur area, that is from Trichur to Shoranur and from Trichur to Chalakkudi. The system is such that lines can be taken from that station to all places in Cochin. In Nemmara we have started already the electrification. In Chittur the construction of the electric power-house will be completed by the end of this year, and there also we will be extending the line wherever there is a demand. The need of the cottage industries will certainly be met by this.

Mr. T. S. Balarama Ayyar *(Trichur North)*.—I do not think that the Trichur Power House is in a position to supply power to the whole area. I can cite many instances where absolutely no reply is sent for demands of power from mills situated at Ollur and Manali. I will therefore refuse to believe that the Trichur Power House is in a position to supply energy to the mills that are situated in and near Trichur. We will leave it as it is.

Mr. E. Ikkanda Warriar *(Urakam)*.—I do not think that that statement is correct.

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Mr. T. S. Balarama Ayyar *(Trichur North)*.—It is correct. I have written from Sri Rama Industrials for about 45 horse power and I have not got a reply.

Mr. A. V. Moothedan *(Chalakkudi)*.— How long is it now?

Mr. T. S. Balarama Ayyar *(Trichur North)*.— It is about one and a half months.

Mr. V. K. Aravindaksha Menon *(Chief Engineer)*.— As things are, our power house is very well loaded but we are now erecting new machinery.

Mr. T. S. Balarama Ayyar *(Trichur North)*.— To make my speech as brief as possible I have only to make a few observations. I remember that after he assumed the dewanship of Cochin Sir Shanmukham said in one of his very first speeches that the vast industrial resources of the State have not been touched even at the surface. That was about 3 years ago. We are now more or less in the same position and I can assure the Government that if they are not going to tackle the hydro electric scheme the position is going to remain the same even when Sir Shanmukham will lay down the reins of his office—it may be 10 years hence. And another point that I want to assure the Honourable Member for Government is if he will be satisfied with a guarantee of about 10,000 kilowats he has only to state that and the necessary guarantee will be coming forward within 6 months' time. If the Government will only come forward and say as they did at Irinjalakuda with regard to a canal that a guarantee is required and that they will take up the question if a guarantee of 10,000 kilowats comes forward, they can have the assurance from me that they will get it in six months' time. Since I see that Government is viewing this question sympathetically I do not want to press this resolution to a division especially in view of the fact that it is a matter involving lakhs of rupees and also it is a matter where it is very easy to commit mistakes. Therefore I beg leave of the House to withdraw my resolution.

The resolution was, by leave withdrawn.

The House rose for the day at 5. p. m.

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